

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A magnetic recording medium comprising:

a non-magnetic base material;

a ferromagnetic metal layer of a ~~cobalt-based~~ CoCrPtB alloy formed on top of said non-magnetic base material; and

a metal underlayer disposed between said base material and said ferromagnetic metal layer, wherein,

a coercive force H_c is at least 2000 (Oe),

an anisotropic magnetic field H_k^{grain} is at least 10,000 (Oe), and

said metal underlayer incorporates an underfilm of either one of Cr and a Cr alloy comprising Mo and/or W,

wherein a lattice misfit of said metal underlayer and said ferromagnetic metal layer, as determined by an equation $(y-x) / (x/2 + y/2) \cdot 100(\%)$, in which x represents a length obtained by multiplying by square root of 2 a lattice constant of said metal underlayer and y represents a c axis length of a crystal lattice of said ferromagnetic metal layer, is a value from 0.5% to 2.5%, and

an axial length ratio a/b of an interatomic distance a in a direction of a normal line to said ferromagnetic metal layer relative to an interatomic distance b in a direction within a plane of said ferromagnetic metal layer is within a range from 1.002 to 1.008.

2. (original) A magnetic recording medium according to claim 1, wherein said metal underlayer and said ferromagnetic metal layer are formed in a film fabrication chamber with an ultimate vacuum at a 10^{-9} Torr level, using a film fabrication gas with an impurity concentration of no more than 1 ppb.

3. (canceled)

4. (previously presented) A magnetic recording medium according to claim 1, wherein said metal underlayer incorporates an underfilm of either one of i) Cr and ii) a Cr alloy comprising Mo and/or W, and at least one element selected from a group consisting of V, Nb, Hf, Zr, Ti, Mn, Ta, Ru, Re, Os, Ir, Rh, Pd, Pt, P, B, Si, Ge, N and O.

5. (previously presented) A magnetic recording medium according to claim 1, wherein a film thickness of said metal underlayer is within a range from 3 nm to 20 nm.

6. (previously presented) A magnetic recording medium according to claim 1, wherein said metal underlayer comprises a layered structure of two or more underfilms with different lattice constants.

7. (original) A magnetic recording medium according to claim 6, wherein said metal underlayer is a two layered construction with a second underfilm layered on top of a first underfilm, and a film thickness ratio t_2/t_1 of a film thickness t_1 of said first underfilm and a film thickness t_2 of said second underfilm is within a range from 0.2 to 5.0.

8. (original) A magnetic recording medium according to claim 7, wherein a film thickness of said first underfilm is within a range from 1.5 nm to 8.5 nm.

9. (previously presented) A magnetic recording medium according to claim 7, wherein a film thickness of said second underfilm is within a range from 1.5 nm to 8.5 nm.

10. (canceled)

11. (previously presented) A magnetic recording medium according to claim 1, wherein said lattice misfit of said metal underlayer and said ferromagnetic metal layer is a value from 0.5% to 1.5%.

12-16. (canceled)

17. (previously presented) A magnetic recording device comprising a magnetic recording medium according to claim 1, a drive section for driving said magnetic recording medium, and a magnetic head for carrying out recording and playback of magnetic information, wherein said magnetic head performs recording and

playback of magnetic information on a moving said magnetic recording medium.

18. (canceled)

19. (previously presented) A magnetic recording medium according to claim 2, wherein said metal underlayer comprises a layered structure of two or more underfilms with different lattice constants.

20. (previously presented) A magnetic recording medium according to claim 1, wherein said metal underlayer comprises a layered structure of two or more underfilm with different lattice constants.

21. (currently amended) A magnetic recording medium, comprising:

a non-magnetic base material;

a metal underlayer formed on top of said non-magnetic base material and incorporating an underfilm of either one of Cr and a Cr alloy incorporating Mo or W; and

a ferromagnetic metal layer of a ~~cobalt-based~~ CoCrPtB alloy formed on top of said non-magnetic base material and said metal underlayer so that said metal underlayer is disposed between said base material and said ferromagnetic metal layer, wherein,

at a same time, a coercive force H_c is at least 2000 (Oe), and an anisotropic magnetic field H_k^{grain} is at least 10,000 (Oe),

a lattice misfit of said metal underlayer and said ferromagnetic metal layer, as determined by an equation $(y-x) / (x/2 + y/2) \cdot 100(\%)$, in which x represents a length obtained by multiplying by square root of 2 a lattice constant of said metal underlayer and y represents a c axis length of a crystal lattice of said ferromagnetic metal layer, is a value from 0.5% to 2.5%, and

an axial length ratio a/b of an interatomic distance a in a direction of a normal line to said ferromagnetic metal layer relative to an interatomic distance b in a direction within a plane of said ferromagnetic metal layer is within a range from 1.002 to 1.008.

22. (previously presented) The magnetic recording medium of claim 21, wherein, said underfilm comprises the Cr alloy incorporating Mo.

23. (previously presented) The magnetic recording medium of claim 21, wherein, said underfilm comprises the Cr alloy incorporating W.

24. (previously presented) The magnetic recording medium of claim 21, wherein, said underfilm comprises the Cr alloy incorporating Mo and W.